EXHIBIT A
U.S. CLAIMS

23. (New) A ribozyme that cleaves estrogen receptor mRNA, wherein said ribozyme comprises the sequence of SEQ ID NO:7 (RZ1) or SEQ ID NO:11 (RZ2).

24. (New) The ribozyme of claim 23, wherein said ribozyme comprises the sequence of SEQ ID NO:7 (RZ1).

25. (New) The ribozyme of claim 24, wherein said ribozyme has the sequence of SEQ ID NO:7 (RZ1).

26. (New) The ribozyme of claim 23, wherein said ribozyme comprises the sequence of SEQ ID NO:11 (RZ2).

27. (New) The ribozyme of claim 26, wherein said ribozyme has the sequence of SEQ ID NO:11 (RZ2).

28. (New) The ribozyme of claim 26, wherein said ribozyme is formulated in a liposome.

29. (New) A nucleic acid that encodes a ribozyme in accordance with claim 23.

30. (New) The nucleic acid of claim 29, wherein said nucleic acid encodes a ribozyme that comprises the sequence of SEQ ID NO:7 (RZ1).

31. (New) The nucleic acid of claim 29, wherein said nucleic acid encodes a ribozyme that comprises the sequence of SEQ ID NO:11 (RZ2).

32. (New) The nucleic acid of claim 29, wherein said nucleic acid further comprises a promoter.

33. (New) The nucleic acid of claim 29, wherein said nucleic acid is comprised within a recombinant vector.

34. (New) The nucleic acid of claim 33, wherein said nucleic acid is comprised within a recombinant viral vector.

35. (New) The nucleic acid of claim 34, wherein said nucleic acid is comprised within a recombinant adenoviral vector, adeno-associated viral vector or retroviral vector.

36. (New) An expression vector that expresses a ribozyme in accordance with claim 23.

37. (New) The expression vector of claim 36, wherein said vector expresses a ribozyme that comprises the sequence of SEQ ID NO:7 (RZ1).

38. (New) The expression vector of claim 36, wherein said vector expresses a ribozyme that comprises the sequence of SEQ ID NO:11 (RZ2).

39. (New) The expression vector of claim 36, wherein said vector provides 5' capping and polyadenylation of the expressed ribozyme.

40. (New) A method for reducing estrogen receptor activity, comprising providing an effective amount of a ribozyme in accordance with claim 23 to estrogen receptor-containing cultured cells.

41. (New) The method of claim 40, wherein the estrogen-dependent proliferation of said cells is inhibited.

42. (New) A method for inhibiting estrogen-dependent cell proliferation, comprising administering a ribozyme in accordance with claim 23 to estrogen receptor-containing cells *in vitro* in an amount effective to inhibit proliferation of said cells.

43. (New) The method of claim 42, wherein said ribozyme comprises the sequence of SEQ ID NO:7 (RZ1).

44. (New) The method of claim 42, wherein said ribozyme comprises the sequence of SEQ ID NO:11 (RZ2).

45. (New) The method of claim 42, wherein said ribozyme is administered to said cells in a liposome.

46. (New) The method of claim 42, wherein a vector that expresses said ribozyme is administered to said cells.

47. (New) The method of claim 46, wherein said vector is an adenoviral vector, adeno-associated viral vector or retroviral vector.

48. (New) The method of claim 42, wherein said estrogen receptor-containing cells are estrogen-dependent tumor cells.

49. (New) The method of claim 48, wherein said estrogen-dependent tumor cells are estrogen-dependent breast cancer cells.

50. (New) The method of claim 42, wherein an antiestrogen compound is further administered to said cells.

WHAT IS CLAIMED IS:

1. A ribozyme that inhibits estrogen-dependent tumor cell proliferation, said ribozyme having a high substrate specificity for an mRNA sequence encoding a DNA-binding domain of the human estrogen receptor of SEQ ID NO:4, wherein said ribozyme is essentially free of endonuclease activity for an mRNA having a DNA binding domain of a glucocorticoid receptor.

2. The ribozyme of claim 1 further defined as RZ1, RZ2, RZ3, RZ4, RZ5, RZ6 or RZ7.

3. The ribozyme of claim 2 further defined as RZ1 and as cleaving the human estrogen receptor mRNA at a site defined as nucleotide position +956 of hERα.

4. The ribozyme of claim 1 further defined as a hammerhead ribozyme having a catalytic core sequence region defined by sequence SEQ ID NO:3.

5. The ribozyme of claim 2 further defined as RZ2 and as cleaving the human estrogen receptor mRNA at a site defined as nucleotide position +894 of hERα.

6. The ribozyme of claim 1 wherein the human estrogen receptor is further defined as estrogen receptor α (ERα).

7. The ribozyme of claim 4 further defined as blocking intracellular *trans*-activation of the estrogen receptor and inhibiting cell cycling of the estrogen-dependent tumor cell.

8. A method for inhibiting estrogen-dependent tumor cell proliferation, comprising administering ribozyme RZ1, RZ2, RZ3, RZ4, RZ5, RZ6, RZ7, or a combination thereof, to cells comprising estrogen-dependent tumor cells, thereby inhibiting proliferation of said estrogen-dependent tumor cells.

9. The method of claim 8 wherein the estrogen dependent tumor cell is an estrogen dependent breast cancer cell.

10. The method of claim 8 wherein a vector that expresses said ribozyme, or a combination thereof, is administered to said estrogen-dependent tumor cells.

11. The method of claim 8 wherein said ribozyme is RZ1 and comprises the sequence of SEQ ID NO:3.

12. The method of claim 10 wherein said vector is an adenovirus vector.

13. The method of claim 10 when said vector is an adeno-associated viral vector, a lentivirus, a herpes simplex virus, a liposome or a molecular conjugate.

14. A method for reducing breast cancer cell proliferation, comprising:

preparing a pharmaceutically acceptable formulation suitable for injection to an animal, wherein said formulation includes as an active ingredient a ribozyme having binding affinity for the human estrogen receptor messenger RNA of SEQ ID NO:4, said ribozyme effectively reducing amounts of human estrogen receptor mRNA in said cell population; and

administering said pharmaceutically acceptable formulation to an animal having breast cancer, thereby reducing breast cancer cell proliferation.

15. The method of claim 14 wherein said ribozyme is further defined as cleaving the mRNA of SEQ ID NO:4 at nucleotide position 170, 190, 267, 377, 508, 515, 543, 603, 645, 889, 894, 956, 1137, 1218, 1240, 1420, 1463, 1468, 1680, 1695, 1726, 2077, or a combination thereof.

16. The method of claim 15 wherein said ribozyme is further defined as cleaving the mRNA of SEQ ID NO:4 at nucleotide position 377 (RZ3), 889 (RZ4), 894 (RZ2), 956 (RZ1), 1680 (RZ5), 1695 (RZ6), 1726 (RZ7), or a combination thereof.

17. The method of claim 14 wherein the animal is a human.

18. A pharmaceutically acceptable formulation that inhibits human breast cancer cell proliferation comprising as an active ingredient a ribozyme having specific binding affinity to the human estrogen receptor messenger RNA sequence of SEQ ID NO:4.

19. The pharmaceutically acceptable formulation of claim 18 wherein said ribozyme is further defined as specifically cleaving the human estrogen receptor mRNA of SEQ ID NO:4 at nucleotide position 377, 889, 894, 956, 1240, 1680, 1695, 1726, or a combination thereof.

20. A ribozyme that cleaves in a site specific manner human estrogen receptor mRNA of SEQ ID NO:4 at nucleotide position 377 (RZ3), 889 (RZ4), 894 (RZ2), 956 (RZ1), 1680 (RZ5), 1695 (RZ6), 1726 (RZ7), or a combination thereof.

21. A ribozyme that cleaves in a site specific manner at a human estrogen receptor mRNA sequence at position 956, 1137, 1218, 1240, 1420, 1463, 1468, 1680, 1695, 1726, 2077 of SEQ ID NO:4, or a combination thereof.

22. A ribozyme that cleaves in a site specific manner at a mRNA for human estrogen receptor of a sequence of SEQ ID NO:4 positioned in an open loop region that is flanked on each side by an AU-rich region.